

## **TERMS OF REFERENCE FOR CONSULTANTS**

### **I. Background**

1. In response to the request from the Government of the Kyrgyz Republic (the government), the Asian Development Bank (ADB) is providing a technical assistance grant for the preparation of the Central Asia Regional Economic Cooperation (CAREC) Corridors 1 and 3 Bishkek Northern Bypass Road Project. The transaction technical assistance (TRTA) will help the government prepare the road reconstruction project, design the reform program for road safety and design the vocational education project. The TRTA will ensure that the project will be prepared to acceptable technical, safeguards, and procurement standards.

2. The executing agency for implementing the transport components under the project is the Ministry of Transport and Roads (MOTR) and the implementation agency will be the International Projects Implementation Group (IPIG). The detailed design of the road has been completed by a national design consultant appointed by MOTR. For the education sector component, the executing agency will be the Ministry of Education (MOE), and the implementation agency will be the Project Implementation Unit (PIU) of the MOE.

3. ADB will engage a team of international consultants (individuals) and national consultants (firm) to assist ADB and MOTR with preparing a project for constructing the bypass road to the standard required for processing ADB financing. The consultants will be recruited in accordance with ADB Procurement Policy (2017, as amended from time to time) and its associated project administration instructions and/or staff instructions.

4. The TRTA consultants are expected to be recruited in phased with the initial group of consultants to be recruited by December 2018 and mobilized by January 2019. The services will generally be provided in Bishkek, and at the project location as required. The MOTR/IPIG will provide the consultants with all reports, documents, and other information that they have reasonably available.

### **II. Scope of Services**

5. The scope of the services to be provided by the consultants will include the following:

- (i) Carrying out due diligence of all aspects of the detailed design, confirming its compliance with relevant international and national standards, particularly for pavements, bridges and road safety aspects.
- (ii) Preparing a report setting out aspects of the detailed design that require amendment to bring it into reasonable compliance with international standards and road safety requirements, agreeing these amendments with MOTR/IPIG and confirming that the amendments have been incorporated into the design. To the extent necessary, advising MOTR/IPIG of the additional surveys and investigations required to support the agreed design amendments;
- (iii) Identifying potential access road connections between the proposed Bishkek Bypass road and the adjacent areas, agreeing with MOTR/IPIG which of these connections should be implemented under the project, and confirming that they have been incorporated into the project design;
- (iv) Preparing a concept design for the proposed green zone to the detail required to procure a design-construct contract for its construction;

- (v) Preparing safeguards assessments, for involuntary resettlement and environment, and preparing appropriate mitigation plans, in accordance with the provisions of ADB's Safeguards Policy Statement 2009, including recommending a categorization for both types of impacts;
- (vi) Preparing a social and gender impact assessment, including collection of baseline data and development of a gender action plan;
- (vii) Preparing a cost estimate for the project, including appropriate contingencies, taking into account costs for similar recent ADB and other internationally-financed projects in the Kyrgyz Republic, in a format similar to the Bills of Quantities that will form part of the subsequent bidding and contract documentation;
- (viii) Conducting economic and financial analyses following ADB's guidelines. This will include appropriate traffic surveys, origin-destination analysis, and other studies;
- (ix) Preparing a procurement plan for the project, in accordance with the ADB Procurement Policy (2017, as amended from time to time) and its associated project administration instructions and/or staff instructions;
- (x) Preparing bidding documents for the project's civil works contracts, based on the relevant ADB standard bidding documents and the specifications and other documents that have been used for earlier ADB-supported road projects, and assisting MOTR/IPIG with obtaining ADB approval of the bidding documents;
- (xi) Preparing a final report for the technical assistance, setting out details of all activities undertaken.

### III. Position-based Terms of Reference

6. The position-based terms of reference (TOR) for each of the consultants who will undertake the services are presented in the tables below.

Position	<b>Team Leader/Highway Engineer – International</b>
Qualifications	Bachelor of Civil Engineering or equivalent, preferably with relevant post-graduate qualifications
Experience	At least 15 years managing multi-disciplinary teams preparing transport sector projects intended for ADB or similar agency financing, preferably with projects that include roads and bridges in institutional and physical environments similar to those prevailing in the project area.
Tasks	<ul style="list-style-type: none"> <li>• Responsible to ADB and MOTR/IPIG for the successful delivery of all aspects of the project;</li> <li>• Overseeing the work of the international and national consultants to ensure that their outputs are coordinated and meet the requirements of their respective TOR;</li> <li>• Maintaining effective communications with MOTR and IPIG, which will be responsible for the implementation of the ensuing project;</li> <li>• Provide brief progress reports to ADB and MOTR/IPIG each month, setting out progress against schedule, problems encountered and how these are to be addressed, and other matters as appropriate;</li> <li>• Working closely with, and requesting additional work as necessary from, the national design consultant that has been engaged by MOTR to prepare the detailed design of the project road;</li> <li>• Provide support and assistance to ADB missions as required, including during the missions preparing financing for the ensuing investment project;</li> <li>• As highway engineer, undertake appropriate due diligence on the highway design aspects of the detailed design, propose amendments where appropriate to reflect improved road safety and climate resilience, and ensure these amendments are incorporated into the final detailed design;</li> <li>• Ensure the final design incorporates appropriately designed accesses to communities located within the vicinity of the project road, as agreed with MOTR/IPIG;</li> <li>• Prepare specifications for the highway-related works and prepare specifications for the overall works by incorporating specifications for other aspects of the project that have been prepared by the relevant specialists.</li> </ul>
Inputs	Person-months: 7 – Intermittent

Position	<b>Transport Economist – International and National</b>
Qualifications	Bachelor of Economics or other appropriate qualification
Experience	At least 10 years of experience in the economic analysis of transport projects, with a substantial part of this experience in projects financed by ADB or other similar international funding agencies. Experience of HDM4 or similar programs would be advantageous. Part of this experience should preferably have been in institutional environments similar to those prevailing in the Kyrgyz Republic.
Tasks	<ul style="list-style-type: none"> <li>• For the project, prepare an economic analysis complying with ADB's Guidelines for the Economic Analysis of Projects (2017) as amended from time to time;</li> <li>• Conduct a careful traffic demand analysis;</li> <li>• Besides analysis of the costs, a climate change related benefits analysis will be conducted;</li> <li>• Respond to ADB's comments and assist MOTR/IPIG with its internal approval of the economic analysis and submit HDM4 files.</li> </ul>
Inputs	Person-months: 2 – Intermittent

Position	<b>Financial Management Expert – International</b>
Qualifications	Degree in accounting, finance, or a related field, and will have a recognized professional accountancy qualification
Experience	At least 15 years experience, including in financial due diligence. Part of this experience should preferably have been in institutional environments similar to those prevailing in the Kyrgyz Republic.
Tasks	<ul style="list-style-type: none"> <li>• Conduct financial management assessment using Technical Guidance Note for Financial Management Assessment (2015) issued by ADB</li> <li>• supporting the preparation and agreement of cost estimates and a financing plan</li> <li>• preparing financial projections and conducting financial analyses of the executing and implementing agencies, and incremental recurrent costs, to determine financial sustainability</li> <li>• assessing and reaching agreement on financial reporting, auditing and public disclosure arrangements for the project.</li> </ul>
Inputs	Person-months: 1 – Intermittent

Position	<b>Road Design Expert – International and National</b>
Qualifications	Bachelor of Civil Engineering or equivalent, preferably with relevant post-graduate qualifications
Experience	At least 15 years managing multi-disciplinary teams preparing preliminary and detailed design for road construction projects, preferably with projects that also include bridges.
Tasks	<ul style="list-style-type: none"> <li>• Review the preliminary and detailed engineering designs and provide recommendations on improving them</li> <li>• Undertake appropriate due diligence on the highway design aspects of the detailed design, propose amendments where appropriate to reflect improved road safety and climate resilience, and ensure these amendments are incorporated into the final detailed design;</li> <li>• Ensure the final design incorporates appropriately designed accesses to communities located within the vicinity of the project road, as agreed with MOTR/IPIG;</li> <li>• Prepare specifications for the highway-related works and prepare specifications for the overall works by incorporating specifications for other aspects of the project that have been prepared by the relevant specialists.</li> <li>• Assist MOTR/IPIG with obtaining government and ADB approvals.</li> </ul>
Inputs	Person-months: 2 – Intermittent

Position	<b>Procurement Expert – International and National</b>
Qualifications	Bachelor of Engineering or other appropriate qualification
Experience	At least 10 years of experience in the procurement of major civil works contracts, with a substantial part of this experience in projects financed by ADB or other similar international funding agencies. Experience with contracts procured using civil works combined with performance-based maintenance approach would be advantageous. Part of this experience should preferably have been in institutional environments similar to those prevailing in the Kyrgyz Republic.
Tasks	<ul style="list-style-type: none"> <li>• For the civil works contract to be procured under conventional international procurement procedures, prepare master and contract-specific bidding documents, based on ADB's procurement guidelines and procedures, and ADB's relevant standard bidding documents;</li> </ul>

Position	<b>Procurement Expert – International and National</b>
	<ul style="list-style-type: none"> <li>• Use of ADB's standard bidding documents or World Bank's Output and Performance Based Road Maintenance Contract is encouraged;</li> <li>• Assist MOTR/IPIG with obtaining government and ADB approval of the bidding documents.</li> </ul>
Inputs	Person-months: 3 – Intermittent

Position	<b>Road Safety Expert – International</b>
Qualifications	Bachelor of Engineering or other appropriate qualification
Experience	At least 10 years of experience in road safety assessments and audits of major highway projects, with a substantial part of this experience in projects financed by ADB or other similar international funding agencies. Part of this experience should preferably have been in institutional and physical environments similar to those prevailing in the Kyrgyz Republic.
Tasks	<ul style="list-style-type: none"> <li>• Working with the Team Leader/Highway Engineer prepare an assessment of the road safety aspects of all parts of the design – roads, bridges etc.</li> <li>• prepare an audit report setting out amendments that must be made to the designs to bring them into compliance with acceptable international standards;</li> <li>• Once the designs are in final draft form, repeat the road safety assessment to ensure that all required road safety facilities and features have been incorporated and, if additional improvements are required, ensure that these improvements are incorporated before the designs are accepted as being final.</li> </ul>
Inputs	Person-months: 2 – Intermittent

Position	<b>Environment Expert – International and National</b>
Qualifications	Bachelor of Environmental Science or other appropriate qualification
Experience	At least 10 years of experience in environment impact assessment preparation, implementation and addressing environment issues for development projects. Part of this experience should preferably have been in institutional and physical environments similar to those prevailing in the Kyrgyz Republic. Proven practical experience in preparing environment impact assessments and conducting stakeholder consultations. Familiar with IFI financed projects.
Tasks	<ul style="list-style-type: none"> <li>• Present the information on the project description in relation to the background environment of the area as per the detailed design;</li> <li>• Study the relevant baseline information including: soil, geology, hydrology, biodiversity, noise, air quality and water quality; conduct baseline surveys for each parameter to establish ambient environmental conditions in the area. For noise, acquire baseline data on a 24-hour basis at representative points and prepare a constructed baseline using these;</li> <li>• Perform an impacts analysis for the construction and operation stages of the project and propose mitigation measures to minimize and/or remove the impacts; conduct noise, vibration and air dispersion modelling using the traffic projections for the project to establish likely environmental impacts in the area; provide detailed assessment on soil/ slope stabilization and erosion, hydrology, etc.;</li> <li>• Assess environmental impacts of the project and its ancillary activities and also discuss <i>cumulative environmental impacts</i>;</li> <li>• Perform a clear analysis of project alternatives such that the environmentally most feasible option emerges as the selected alignment;</li> <li>• Develop an environmental sensitivity mapping of the project area using the baseline data collected; include data on noise, vibration, social indicators, water and soil;</li> <li>• Perform a risk based environmental impact analysis of the likely impacts of the project based on the findings and results of the noise and air emissions modeling, biodiversity baseline and other sensitive environmental parameters along the alignment;</li> <li>• As part of the environment impact assessment (EIA)/Initial Environmental Examination (IEE), prepare an environmental management plan (EMP) including the use of appropriate mitigation technologies, an environmental monitoring plan with monitoring indicators, and institutional arrangements and responsibilities (including cost estimates and training);</li> <li>• Conduct an institutional environmental capacity review with regards to the implementation capacity of the executing agency with regards to environmental safeguards. Prepare a capacity development program to deal with each of the identified capacity gaps.</li> <li>• Conduct meaningful public consultation with communities and relevant stakeholders in the area of influence of the project at least twice during the environmental assessment process, once at the planning stage and once when the final detailed design is available for sharing with all stakeholders. Consult all local and national level stakeholders, including community-based</li> </ul>

Position	<b>Environment Expert – International and National</b>
	<p>organization and national and international NGOs actively working in the area. Ensure, and provide evidence that the findings and concerns of the communities have been addressed in the EIA report;</p> <ul style="list-style-type: none"> <li>• The EIA and its EMP should contain the requirement for the preparation of a site specific EMP by the contractor (using a risk-based approach) to ensure that the mitigation measures are customized to the needs of the various aspects of the project and the alignment;</li> <li>• The EIA should contain maps and figures to explain the details and all supporting data and studies performed as part of the EIA should be duly annexed;</li> <li>• Prepare a Grievance Redress Mechanism that is operational for the project, including community representation along the entire alignment of the road.</li> </ul>
Inputs	Person-months: 2 – Intermittent

Position	<b>Resettlement and Gender Expert – International and National</b>
Qualifications	Bachelor of community development, anthropology, sociology or other appropriate qualification
Experience	At least 10 years of experience in resettlement plan preparation, implementation and addressing resettlement issues for development projects financed by ADB or similar development agencies. Part of this experience should preferably have been in institutional and physical environments similar to those prevailing in the Kyrgyz Republic. Proven practical experience in preparing resettlement plans and conducting stakeholder consultations for Category A projects.
Tasks	<ul style="list-style-type: none"> <li>• Analyze relevant laws and regulations vis-à-vis ADB's involuntary resettlement safeguard requirements, as described in the ADB Safeguard Policy Statement (SPS) 2009, and recommend gap-filling measures as needed;</li> <li>• Identify potential land acquisition and resettlement (LAR) impacts of the proposed project and conduct the necessary preparatory surveys (inventory of loss, socioeconomic survey of project-affected households, valuation survey);</li> <li>• Prepare a land acquisition and resettlement plan (LARP) in accordance with ADB's SPS;</li> <li>• Conduct meaningful consultations with affected households and other relevant stakeholders. Work closely with the government agency responsible for resettlement and assist the government in initiating a participatory process for LARP preparation and approval;</li> <li>• Advise the executing agency, participating local government(s), and implementing agencies on SPS (2009) requirements and procedures;</li> <li>• Assess the capacity and commitment of the responsible institutions to plan, update, and implement LARPs, and propose capacity building/training programs, as needed;</li> <li>• In close coordination with the other team specialists, develop a project-specific grievance redress mechanism to handle complaints in an effective and culturally-appropriate manner;</li> <li>• Ensure the collection of baseline data (sex-disaggregated, as much as feasible) on a range of socioeconomic indicators appropriate for the project with focus on needs, demands, constraints faced by poor, women and vulnerable groups in the project area in terms of their equitable access to the benefits and opportunities associated with the project.</li> <li>• Conduct gender analysis, including meeting with women residing or working along the project roads if appropriate, and identify their livelihoods needs and any potential project design element to address gender equity and enhance through the project implementation, if appropriate. Gender analysis will be carried out to inform the design of the project;</li> <li>• Collect data on number of women led businesses in the project area, especially along the road; size of businesses and main sectors they are working in. Identify, through consultation workshops with women entrepreneurs, the formal and informal barriers to women business development;</li> <li>• Identify mechanisms to ensure women's and girl's participation in the project including development of a gender action plan.</li> </ul>
Inputs	Person-months: 3 – Intermittent

Position	<b>Noise and Vibration Expert – International</b>
Qualifications	Bachelor of Environmental Science or other appropriate qualification
Experience	At least 15 years of experience in conducting vibration surveys and impact assessment related to construction activities. Proven practical experience in vibration measurement, modelling and application of results for impact assessment purposes. Demonstration of provision of practical mitigation measures for identified significant effects is required.
Tasks	<ul style="list-style-type: none"> <li>• For noise, acquire baseline data on a 24-hour basis at representative points and prepare a constructed baseline using these;</li> <li>• Perform an impacts analysis for the construction and operation stages of the project and propose mitigation measures to minimize and/or remove the impacts; conduct noise, vibration and air dispersion modelling using the traffic projections for the project to establish likely environmental impacts in the area;</li> <li>• Develop an environmental sensitivity mapping of the project area using the baseline data collected for noise and vibration;</li> <li>• Perform a risk based environmental impact analysis of the likely impacts of the project based on the findings and results of the noise and vibration along the entire project alignment for construction and operation phases;</li> <li>• Prepare an environmental management plan (EMP) (using a risk-based approach) including the use of appropriate mitigation technologies, with monitoring indicators, and institutional arrangements and responsibilities (including cost estimates and training);</li> <li>• Conduct meaningful public consultation with communities and relevant stakeholders in the area of influence of the project.</li> </ul>
Inputs	Person-months: 2 – Intermittent

Position	<b>Climate Change Expert – International</b>
Qualifications	Bachelor of climate science or related field, preferably with relevant post-graduate qualifications
Experience	At least 10 years of experience in climate change analysis; climate change impacts and vulnerability assessments, risk management and/or adaptation planning and practices. Part of this experience should preferably have been in institutional and physical environments similar to those prevailing in the Kyrgyz Republic.
Tasks	<ul style="list-style-type: none"> <li>• Identify key climate parameters relevant for the study, focusing on those applicable to the primary climate hazards of the project;</li> <li>• Collate baseline (historical) levels of key parameters and associated hazards;</li> <li>• Develop simplified “best estimate” and “high case” scenarios for the key parameters and associated hazards under climate change for the lifetime of the project, using most current and relevant regional climate projections available;</li> <li>• Assess the vulnerabilities of the project and the associated risks to the structural components of the project under these scenarios, including implications for performance and operation;</li> <li>• Identify adaptation options appropriate to project conditions and design objectives, including structural and non-structural approaches and interventions, along with estimations of monetary benefits where feasible. This includes economic assessment of adaptation options identified, and the estimation of adaptation finance required.</li> </ul>
Inputs	Person-months: 1 – Intermittent

Position	<b>Environmental buffer zone Expert – International</b>
Qualifications	Bachelor of climate science, environment or related field, preferably with relevant post-graduate qualifications
Experience	At least 10 years of experience in designing environmental buffer zones, ecological zones or similar areas.
Tasks	<ul style="list-style-type: none"> <li>• Identify likely impacts of the road rehabilitation on the local ecology;</li> <li>• Design a environmental buffer zone for mitigating the impacts of the road operations.</li> <li>• Identify other climate change adaptation options appropriate to project conditions and design objectives, including structural and non-structural approaches and interventions, along with estimations of monetary benefits where feasible. This includes economic assessment of adaptation options identified, and the estimation of adaptation finance required.</li> </ul>
Inputs	Person-months: 1 – Intermittent

Position	<b>Education Expert – International</b>
Qualifications	Bachelor of education sciences or related field, preferably with relevant post-graduate qualifications
Experience	At least 10 years of experience of technical vocational education training programs, entrepreneurship education and work-based learning. Part of this experience should preferably have been in institutional and physical environments similar to those prevailing in the Kyrgyz Republic.
Tasks	<ul style="list-style-type: none"> <li>• analysis of international and regional good practices</li> <li>• review of existing sector issues as well as project level issues</li> <li>• recommend policy level changes as well as key strategic interventions for inclusion in the project design</li> <li>• for the education sector component, establish program rationale, scope, cost, schedule, implementation arrangements, risks and mitigation measures.</li> </ul>
Inputs	Person-months: 1 – Intermittent

Position	<b>Deputy Team Leader/ Highway Engineer – National</b>
Qualifications	Bachelor of Civil Engineering or other appropriate qualification
Experience	At least 15 years of experience in the design and construction of road projects involving major earthworks, high standard pavements, bridges and preferably tunnels.
Tasks	<ul style="list-style-type: none"> <li>• Working with the Team Leader/Highway Engineer to provide overall management for the assignment;</li> <li>• Maintaining day-to-day communications with MOTR/IPIG as required;</li> <li>• Working with the Team Leader as Highway Engineer to undertake due diligence of the detailed design, in particular the road aspects but also the bridges as appropriate;</li> <li>• Working with the Team Leader and other team members to produce detailed cost estimates for the project, taking into account contracts awarded and bids submitted for other similar works in the Kyrgyz Republic and elsewhere in the region, in particular those financed by ADB and other similar funding agencies.</li> <li>• Providing the international members of the team with technical translation support (Russian/English) as required;</li> <li>• Accompany the international team members during field visits as required.</li> </ul>
Inputs	Person-months: 7 – Full time

Position	<b>Translator – National</b>
Qualifications	Qualifications appropriate for the position
Experience	At least 10 years of experience in providing Russian/English translation services for activities similar to the project, including in high level meetings and other interactions with governments.
Tasks	<ul style="list-style-type: none"> <li>• Providing oral and written translation services as required, including the translation of technical reports, contract documentation, etc.</li> <li>• Assisting the Team Leader and Deputy Team Leader with technical translations where required.</li> </ul>
Inputs	Person-months: 7 – Full time